



National Toxicology Program
Department of Health and Human Services

NTP Historical Controls Report

All Routes and Vehicles

F 344/N Tac RATS

June 2013

REPORT DESCRIPTION

This report shows the tumor rates of control group animals from selected studies. The studies used are shown on the Study Summary page.

The report combines all the data from all of the historical control studies into one section. To see this data broken up by route and vehicle you must run the "By Route And Vehicle" report.

The individual tumor rates shown on the data pages of the report relate to the Study Summary page as follows: the tumor rates are shown in the same order as the Study Summary page, except that they are grouped horizontally in sets of three, with the males in the first set of three and the females in the second set. For example if the study summary showed the studies like this:

Male

M1
M2
M3
M4
M5

Female

F1
F2
F3
F4
F5

the data would be shown as:

	Male			Female		
M1	M2	M3	F1	F2	F3	
M4	M5		F4	F5		

Directly beneath the individual tumor rates on the data pages are the overall totals for that tumor/site combination. This includes the total tumors/animals, the overall mean (in parentheses), the mean of the study means, and the standard deviation of the study means.

Studies with no control animals of a particular gender are listed on the summary page with the Number of Animals shown as zero and the Start Date and Length of Study shown as "N/A". On the data pages there are blank spaces where tumor rates for these studies would normally be found, so that the male and female rates for the remaining studies can be easily compared.

Version: Jun2013
Contract/Lab: All Laboratories
Species: RATS
Strain: F 344/N Tac
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: ALL ROUTES
Vehicle: ALL VEHICLES

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Report Date: 06/12/2013

Study Summary

Laboratory Name	Study Number	Study Start Date	Length of Study in Days	Number of Animals Total and (#/Cage)	Number Surviving and (Mean Life Span)	Maximum Mean Weekly Body Weight	Chemical
Male							
Battelle Northwest	056031105	05/08/06	729	50(5)	17(663)	532.6	Cobalt
Battelle Columbus Laboratory	059601405	10/26/06	726	50(3)	19(658)	528.0	Water disinfection byproducts (Bromodichloroacetic acid)
Female							
Battelle Northwest	056031105	05/08/06	730	50(5)	35(688)	350.7	Cobalt
Battelle Columbus Laboratory	059601405	10/27/06	727	50(5)	34(694)	352.8	Water disinfection byproducts (Bromodichloroacetic acid)

NOTE: The text on page 2 ("Report Description") describes how the studies listed here are displayed on the data pages that follow.

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male			Female			
#All Organs:								
Benign Tumors								
		47/50 (94%)	46/50 (92%)		44/50 (88%)	41/50 (82%)		
Overall Incidence	Total	93/100 (93%)	Mean 93%	SD 1.41%	Total	85/100 (85%)	Mean 85%	SD 4.24%
.....								
#All Organs:								
Malignant Tumors								
		31/50 (62%)	24/50 (48%)		25/50 (50%)	23/50 (46%)		
Overall Incidence	Total	55/100 (55%)	Mean 55%	SD 9.9%	Total	48/100 (48%)	Mean 48%	SD 2.83%
.....								
#All Organs:								
Malignant and Benign Tumors								
		50/50 (100%)	49/50 (98%)		48/50 (96%)	47/50 (94%)		
Overall Incidence	Total	99/100 (99%)	Mean 99%	SD 1.41%	Total	95/100 (95%)	Mean 95%	SD 1.41%
.....								
#All Organs:								
Hemangioma								
		0/50 (0%)	0/50 (0%)		0/50 (0%)	1/50 (2%)		
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#All Organs:								
Hemangiosarcoma								
		0/50 (0%)	0/50 (0%)		1/50 (2%)	0/50 (0%)		
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#All Organs:								
Hemangiosarcoma or Hemangioma								
		0/50 (0%)	0/50 (0%)		1/50 (2%)	1/50 (2%)		
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	2/100 (2%)	Mean 2%	SD 0%
.....								

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

	Male				Female			
#All Organs:								
Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated								
		21/50 (42%)	15/50 (30%)		16/50 (32%)	19/50 (38%)		
Overall Incidence	Total	36/100 (36%)	Mean 36%	SD 8.49%	Total	35/100 (35%)	Mean 35%	SD 4.24%
.....								
#All Organs:								
Mesothelioma: Benign, Malignant, NOS								
		2/50 (4%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	3/100 (3%)	Mean 3%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#All Organs:								
Mesothelioma: Malignant								
		2/50 (4%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	3/100 (3%)	Mean 3%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#All Organs:								
Osteoma								
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#All Organs:								
Osteosarcoma or Osteoma								
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
*Adrenal Cortex:								
Adenoma								
		0/50 (0%)	2/50 (4%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	2/100 (2%)	Mean 2%	SD 2.83%	Total	0/100 (0%)	Mean 0%	SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

Page: 6
 Report Date: 06/12/2013

		Male			Female			
*Adrenal Medulla:								
Pheochromocytoma Benign								
		15/50 (30%)	10/50 (20%)		6/50 (12%)	1/50 (2%)		
Overall Incidence	Total	25/100 (25%)	Mean 25%	SD 7.07%	Total	7/100 (7%)	Mean 7%	SD 7.07%
.....								
*Adrenal Medulla:								
Pheochromocytoma Malignant								
		2/50 (4%)	0/50 (0%)		0/50 (0%)	1/50 (2%)		
Overall Incidence	Total	2/100 (2%)	Mean 2%	SD 2.83%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
*Adrenal Medulla:								
Pheochromocytoma: Benign, Complex, Malignant, NOS								
		17/50 (34%)	10/50 (20%)		6/50 (12%)	2/50 (4%)		
Overall Incidence	Total	27/100 (27%)	Mean 27%	SD 9.9%	Total	8/100 (8%)	Mean 8%	SD 5.66%
.....								
#Bone:								
Osteoma								
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#Bone:								
Osteosarcoma or Osteoma								
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
*Brain:								
Astrocytoma Malignant								
		1/50 (2%)	0/50 (0%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male				Female					
*Brain:											
Fibrous Histiocytoma											
		0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
*Brain:											
Glioma											
		0/50	(0%)	0/50	(0%)			0/50	(0%)	1/50	(2%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
*Brain:											
Granular Cell Tumor Benign											
		0/50	(0%)	2/50	(4%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
*Brain:											
Oligodendroglioma, Glioma, or Astrocytoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
*Clitoral/Preputial Gland:											
Adenoma											
		1/50	(2%)	2/50	(4%)			2/49	(4%)	8/50	(16%)
Overall Incidence	Total	3/100	(3%)	Mean 3%	SD 1.41%	Total	10/99	(10.1%)	Mean 10.04%	SD 8.43%	
.....											
*Clitoral/Preputial Gland:											
Carcinoma											
		2/50	(4%)	2/50	(4%)			4/49	(8%)	1/50	(2%)
Overall Incidence	Total	4/100	(4%)	Mean 4%	SD 0%	Total	5/99	(5.05%)	Mean 5.08%	SD 4.36%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male				Female			
*Clitoral/Preputial Gland: Carcinoma or Adenoma									
		3/50 (6%)	4/50 (8%)		6/49 (12%)	8/50 (16%)			
Overall Incidence	Total	7/100 (7%)	Mean 7%	SD 1.41%	Total	14/99 (14.14%)	Mean 14.12%	SD 2.66%	
.....									
#Ear: Neural Crest Tumor									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
#Harderian Gland: Carcinoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
#Harderian Gland: Carcinoma or Adenoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
*Heart: Schwannoma Malignant									
		1/50 (2%)	0/50 (0%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
#Intestine Large: Colon/Rectum: Adenoma									
		0/50 (0%)	0/50 (0%)		0/50 (0%)	1/50 (2%)			
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%	

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: ALL ROUTES
Vehicle: ALL VEHICLES

Page: 9
 Report Date: 06/12/2013

		Male				Female			
#Intestine Large: Colon/Rectum:									
Carcinoma or Adenoma									
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%
									SD 1.41%
.....									
#Intestine Small: Ileum:									
Carcinoma									
		0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%
									SD 1.41%
.....									
#Intestine Small: Jejunum:									
Carcinoma									
		0/50	(0%)	0/50	(0%)	1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%
									SD 1.41%
.....									
#Intestine Small: Site Unspecified:									
Carcinoma									
		0/50	(0%)	0/50	(0%)	2/50	(4%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	2/100	(2%)	Mean 2%
									SD 2.83%
.....									
#Intestine Small: Site Unspecified:									
Carcinoma or Adenoma									
		0/50	(0%)	0/50	(0%)	2/50	(4%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	2/100	(2%)	Mean 2%
									SD 2.83%
.....									
*Islets, Pancreatic:									
Adenoma									
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%
									SD 1.41%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: ALL ROUTES
Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male				Female			
*Islets, Pancreatic:									
 Carcinoma									
		2/50	(4%)	0/50	(0%)	1/50	(2%)	0/50	(0%)
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	1/100	(1%)	Mean 1%
									SD 1.41%
.....									
*Islets, Pancreatic:									
 Carcinoma or Adenoma									
		2/50	(4%)	0/50	(0%)	1/50	(2%)	1/50	(2%)
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	2/100	(2%)	Mean 2%
									SD 0%
.....									
*Kidney: Renal Tubule:									
 Adenoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%
.....									
*Kidney: Renal Tubule:									
 Carcinoma or Adenoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%
.....									
*Kidney: Renal Tubule:									
 Lipoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%
.....									
*Liver:									
 Fibrous Histiocytoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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		Male				Female			
*Liver:									
Hemangioma									
		0/50	(0%)	0/50	(0%)	0/50	(0%)	1/50	(2%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%
									SD 1.41%
.....									
*Lung:									
Alveolar/Bronchiolar Adenoma									
		2/50	(4%)	3/50	(6%)	2/50	(4%)	0/50	(0%)
Overall Incidence	Total	5/100	(5%)	Mean 5%	SD 1.41%	Total	2/100	(2%)	Mean 2%
									SD 2.83%
.....									
*Lung:									
Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma									
		2/50	(4%)	3/50	(6%)	2/50	(4%)	0/50	(0%)
Overall Incidence	Total	5/100	(5%)	Mean 5%	SD 1.41%	Total	2/100	(2%)	Mean 2%
									SD 2.83%
.....									
*Lung:									
Fibrous Histiocytoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%
.....									
*Lung:									
Squamous Cell Carcinoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%
.....									
#Lymph Node:									
Fibrous Histiocytoma									
		0/50	(0%)	1/50	(2%)	0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%
									SD 0%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male				Female			
#Mammary Gland: Adenoma									
		0/50 (0%)	0/50 (0%)		1/50 (2%)	1/50 (2%)			
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	2/100 (2%)	Mean 2%	SD 0%	
#Mammary Gland: Carcinoma									
		1/50 (2%)	0/50 (0%)		2/50 (4%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	2/100 (2%)	Mean 2%	SD 2.83%	
#Mammary Gland: Carcinoma or Adenoma									
		1/50 (2%)	0/50 (0%)		3/50 (6%)	1/50 (2%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	4/100 (4%)	Mean 4%	SD 2.83%	
#Mammary Gland: Fibroadenoma									
		1/50 (2%)	0/50 (0%)		18/50 (36%)	28/50 (56%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	46/100 (46%)	Mean 46%	SD 14.14%	
#Mammary Gland: Fibroma, Fibroadenoma or Adenoma									
		1/50 (2%)	0/50 (0%)		19/50 (38%)	28/50 (56%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	47/100 (47%)	Mean 47%	SD 12.73%	
#Mammary Gland: Fibroma, Fibroadenoma, Carcinoma, or Adenoma									
		2/50 (4%)	0/50 (0%)		20/50 (40%)	28/50 (56%)			
Overall Incidence	Total	2/100 (2%)	Mean 2%	SD 2.83%	Total	48/100 (48%)	Mean 48%	SD 11.31%	

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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 Report Date: 06/12/2013

		Male				Female			
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Papilloma Squamous or Papilloma									
		0/50 (0%)	0/50 (0%)		1/50 (2%)	0/50 (0%)			
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%	
.....									
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva): Squamous Cell Carcinoma, Papilloma Squamous, or Papilloma									
		0/50 (0%)	1/50 (2%)		1/50 (2%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	1/100 (1%)	Mean 1%	SD 1.41%	
.....									
#Oral Mucosa: Squamous Cell Carcinoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
*Pancreas: Adenoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
*Pancreas: Carcinoma or Adenoma									
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
Route: ALL ROUTES
Vehicle: ALL VEHICLES

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		Male				Female					
*Pancreas:											
Mixed Tumor Malignant											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
*Pituitary Gland: Pars Distalis or Unspecified Site:											
Adenoma											
		27/50	(54%)	26/50	(52%)			29/50	(58%)	23/50	(46%)
Overall Incidence	Total	53/100	(53%)	Mean 53%	SD 1.41%	Total	52/100	(52%)	Mean 52%	SD 8.49%	
.....											
*Pituitary Gland: Pars Distalis or Unspecified Site:											
Carcinoma or Adenoma											
		27/50	(54%)	26/50	(52%)			29/50	(58%)	23/50	(46%)
Overall Incidence	Total	53/100	(53%)	Mean 53%	SD 1.41%	Total	52/100	(52%)	Mean 52%	SD 8.49%	
.....											
*Prostate:											
Adenoma											
		1/50	(2%)	1/50	(2%)						
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 0%						
.....											
*Prostate:											
Carcinoma or Adenoma											
		1/50	(2%)	1/50	(2%)						
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 0%						
.....											
*Salivary Glands:											
Adenoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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		Male				Female					
*Salivary Glands:											
 Carcinoma or Adenoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skeletal Muscle:											
 Fibrous Histiocytoma											
		0/50	(0%)	1/50	(2%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skin:											
 Basal Cell Adenoma											
		2/50	(4%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
 Basal Cell Adenoma or Basosquamous Tumor Benign											
		2/50	(4%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
 Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma											
		4/50	(8%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	4/100	(4%)	Mean 4%	SD 5.66%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
 Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma											
		4/50	(8%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	4/100	(4%)	Mean 4%	SD 5.66%	Total	1/100	(1%)	Mean 1%	SD 1.41%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
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 Vehicle: ALL VEHICLES

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	Male				Female			
#Skin:								
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma								
		8/50 (16%)	9/50 (18%)		2/50 (4%)	0/50 (0%)		
Overall Incidence	Total	17/100 (17%)	Mean 17%	SD 1.41%	Total	2/100 (2%)	Mean 2%	SD 2.83%
.....								
#Skin:								
Fibroma								
		2/50 (4%)	4/50 (8%)		2/50 (4%)	2/50 (4%)		
Overall Incidence	Total	6/100 (6%)	Mean 6%	SD 2.83%	Total	4/100 (4%)	Mean 4%	SD 0%
.....								
#Skin:								
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma								
		2/50 (4%)	6/50 (12%)		3/50 (6%)	2/50 (4%)		
Overall Incidence	Total	8/100 (8%)	Mean 8%	SD 5.66%	Total	5/100 (5%)	Mean 5%	SD 1.41%
.....								
#Skin:								
Fibrosarcoma								
		0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#Skin:								
Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma								
		0/50 (0%)	2/50 (4%)		1/50 (2%)	0/50 (0%)		
Overall Incidence	Total	2/100 (2%)	Mean 2%	SD 2.83%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Skin:								
Fibrous Histiocytoma								
		0/50 (0%)	1/50 (2%)		1/50 (2%)	0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	1/100 (1%)	Mean 1%	SD 1.41%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
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		Male				Female					
#Skin:											
Hamartoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skin:											
Keratoacanthoma											
		4/50	(8%)	7/50	(14%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	11/100	(11%)	Mean 11%	SD 4.24%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skin:											
Lipoma											
		2/50	(4%)	1/50	(2%)			1/50	(2%)	2/50	(4%)
Overall Incidence	Total	3/100	(3%)	Mean 3%	SD 1.41%	Total	3/100	(3%)	Mean 3%	SD 1.41%	
.....											
#Skin:											
Neurofibrosarcoma or Schwannoma (malignant or NOS)											
		0/50	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
Neurofibrosarcoma, Neurofibroma, or Schwannoma (benign, malignant or NOS)											
		0/50	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
Schwannoma Malignant											
		0/50	(0%)	0/50	(0%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	0/100	(0%)	Mean 0%	SD 0%	Total	1/100	(1%)	Mean 1%	SD 1.41%	

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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		Male				Female					
#Skin:											
Squamous Cell Carcinoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skin:											
Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma											
		1/50	(2%)	0/50	(0%)			0/50	(0%)	0/50	(0%)
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	0/100	(0%)	Mean 0%	SD 0%	
.....											
#Skin:											
Squamous Cell Papilloma											
		0/50	(0%)	3/50	(6%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	3/100	(3%)	Mean 3%	SD 4.24%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
Squamous Cell Papilloma or Papilloma											
		0/50	(0%)	3/50	(6%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	3/100	(3%)	Mean 3%	SD 4.24%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma											
		5/50	(10%)	9/50	(18%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	14/100	(14%)	Mean 14%	SD 5.66%	Total	1/100	(1%)	Mean 1%	SD 1.41%	
.....											
#Skin:											
Squamous Cell Papilloma, Papilloma, or Keratoacanthoma											
		4/50	(8%)	9/50	(18%)			1/50	(2%)	0/50	(0%)
Overall Incidence	Total	13/100	(13%)	Mean 13%	SD 7.07%	Total	1/100	(1%)	Mean 1%	SD 1.41%	

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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		Male				Female				
#Skin:										
Trichoepithelioma										
		2/50	(4%)	0/50	(0%)	0/50	(0%)	0/50	(0%)	
Overall Incidence	Total	2/100	(2%)	Mean 2%	SD 2.83%	Total	0/100	(0%)	Mean 0%	SD 0%
.....										
#Stomach, Forestomach:										
Squamous Cell Carcinoma or Papilloma Squamous										
		0/50	(0%)	1/50	(2%)	1/50	(2%)	0/50	(0%)	
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	1/100	(1%)	Mean 1%	SD 1.41%
.....										
#Stomach, Forestomach:										
Squamous Cell Papilloma										
		0/50	(0%)	1/50	(2%)	1/50	(2%)	0/50	(0%)	
Overall Incidence	Total	1/100	(1%)	Mean 1%	SD 1.41%	Total	1/100	(1%)	Mean 1%	SD 1.41%
.....										
*Testes:										
Adenoma										
		35/50	(70%)	34/50	(68%)					
Overall Incidence	Total	69/100	(69%)	Mean 69%	SD 1.41%					
.....										
*Thymus:										
Thymoma Malignant										
		0/46	(0%)	0/48	(0%)	0/47	(0%)	1/48	(2%)	
Overall Incidence	Total	0/94	(0%)	Mean 0%	SD 0%	Total	1/95	(1.05%)	Mean 1.04%	SD 1.47%
.....										
*Thymus:										
Thymoma: Benign, Malignant, NOS										
		0/46	(0%)	0/48	(0%)	0/47	(0%)	1/48	(2%)	
Overall Incidence	Total	0/94	(0%)	Mean 0%	SD 0%	Total	1/95	(1.05%)	Mean 1.04%	SD 1.47%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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		Male				Female			
*Thyroid Gland: C-Cell: Adenoma									
		4/49 (8%)	7/50 (14%)		8/50 (16%)	11/50 (22%)			
Overall Incidence	Total	11/99 (11.11%)	Mean 11.08%	SD 4.13%	Total	19/100 (19%)	Mean 19%	SD 4.24%	
.....									
*Thyroid Gland: C-Cell: Carcinoma									
		1/49 (2%)	1/50 (2%)		1/50 (2%)	0/50 (0%)			
Overall Incidence	Total	2/99 (2.02%)	Mean 2.02%	SD 0.03%	Total	1/100 (1%)	Mean 1%	SD 1.41%	
.....									
*Thyroid Gland: C-Cell: Carcinoma or Adenoma									
		5/49 (10%)	8/50 (16%)		9/50 (18%)	11/50 (22%)			
Overall Incidence	Total	13/99 (13.13%)	Mean 13.1%	SD 4.1%	Total	20/100 (20%)	Mean 20%	SD 2.83%	
.....									
*Thyroid Gland: Follicular Cell: Adenoma									
		0/49 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/99 (1.01%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%	
.....									
*Thyroid Gland: Follicular Cell: Carcinoma									
		2/49 (4%)	0/50 (0%)		1/50 (2%)	0/50 (0%)			
Overall Incidence	Total	2/99 (2.02%)	Mean 2.04%	SD 2.89%	Total	1/100 (1%)	Mean 1%	SD 1.41%	
.....									
*Thyroid Gland: Follicular Cell: Carcinoma or Adenoma									
		2/49 (4%)	1/50 (2%)		1/50 (2%)	0/50 (0%)			
Overall Incidence	Total	3/99 (3.03%)	Mean 3.04%	SD 1.47%	Total	1/100 (1%)	Mean 1%	SD 1.41%	

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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	Male				Female			
#Tongue:								
Squamous Cell Carcinoma or Papilloma Squamous								
		0/50 (0%)	0/50 (0%)		1/50 (2%)	0/50 (0%)		
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Tongue:								
Squamous Cell Papilloma								
		0/50 (0%)	0/50 (0%)		1/50 (2%)	0/50 (0%)		
Overall Incidence	Total	0/100 (0%)	Mean 0%	SD 0%	Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Uterus:								
Deciduoma NOS								
					0/50 (0%)	1/50 (2%)		
Overall Incidence					Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Uterus:								
Fibrous Histiocytoma								
					0/50 (0%)	1/50 (2%)		
Overall Incidence					Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Uterus:								
Hemangiosarcoma								
					1/50 (2%)	0/50 (0%)		
Overall Incidence					Total	1/100 (1%)	Mean 1%	SD 1.41%
.....								
#Uterus:								
Leiomyoma								
					1/50 (2%)	0/50 (0%)		
Overall Incidence					Total	1/100 (1%)	Mean 1%	SD 1.41%

*: Denominator is number of animals with tissues examined microscopically
 #: Denominator is number of animals necropsied

Version: Jun2013
 Contract/Lab: All Laboratories
 Species: RATS
 Strain: F 344/N Tac
 Length of Study: CHRONIC

Toxicology Data Management System
 Tumor Incidence for Selected Control Animal Groups
 Route: ALL ROUTES
 Vehicle: ALL VEHICLES

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	Male				Female			
#Uterus:								
Leiomyosarcoma								
					0/50 (0%)		1/50 (2%)	
Overall Incidence				Total	1/100 (1%)		Mean 1%	SD 1.41%
.....								
#Uterus:								
Polyp Stromal								
					10/50 (20%)		4/50 (8%)	
Overall Incidence				Total	14/100 (14%)		Mean 14%	SD 8.49%
.....								
#Uterus:								
Sarcoma Stromal								
					0/50 (0%)		1/50 (2%)	
Overall Incidence				Total	1/100 (1%)		Mean 1%	SD 1.41%
.....								
#Uterus:								
Sarcoma Stromal or Polyp Stromal								
					10/50 (20%)		5/50 (10%)	
Overall Incidence				Total	15/100 (15%)		Mean 15%	SD 7.07%
.....								
#Zymbal's Gland:								
Adenoma								
		1/50 (2%)		0/50 (0%)		0/50 (0%)		
Overall Incidence	Total	1/100 (1%)	Mean 1%	SD 1.41%	Total	0/100 (0%)	Mean 0%	SD 0%
.....								
#Zymbal's Gland:								
Carcinoma								
		3/50 (6%)		1/50 (2%)		0/50 (0%)		
Overall Incidence	Total	4/100 (4%)	Mean 4%	SD 2.83%	Total	0/100 (0%)	Mean 0%	SD 0%

*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013
Contract/Lab: All Laboratories
Species: RATS
Strain: F 344/N Tac
Length of Study: CHRONIC

Toxicology Data Management System
Tumor Incidence for Selected Control Animal Groups
Route: ALL ROUTES
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	Male				Female			
#Zymbal's Gland:								
Carcinoma or Adenoma		4/50 (8%)	1/50 (2%)		0/50 (0%)	0/50 (0%)		
Overall Incidence	Total	5/100 (5%)	Mean 5%	SD 4.24%	Total	0/100 (0%)	Mean 0%	SD 0%

*: Denominator is number of animals with tissues examined microscopically
#: Denominator is number of animals necropsied